Application No. 09/874,878
Examiner: Y. Lee
Attorney Docket No. 2001-0161C

REMARKS

Reconsideration and allowance are requested. The Examiner objected to the language used in the Abstract. Applicant has amended the Abstract to address the Examiner's concerns. Applicant requests withdrawal of the objection.

Claims 7 - 10, 13 and 15 - 18 were rejected under Section 112 for minor instances of insufficient antecedent basis. Applicant has amended the claims to overcome this rejection. These amendments do not narrow the scope of the claims. Based on these amendments, Applicant respectfully requests withdrawal of the Section 112 rejection.

Other minor amendments are made to claims 7 and 8 to make the language consistent in the claims. These amendments are not made for patentability and do not narrow the scope of the claims.

Rejection of Claims 1 - 8 and 11 - 26 Under Section 102

The Examiner rejects claims 1 - 8 and 11 - 16 under Section 102 as being anticipated by U.S. Patent No. 6,516,090 to Lennon et al. ("Lennon et al."). Applicant traverses this rejection and submits that Lennon et al. do not anticipate the present invention.

We first turn to claim 1. This claim recites a method of decoding a bitstream encoded via a plurality of encoders, the bitstream being arranged in portions. The method comprises identifying the portions within the bitstream and routing the identified portions to one of a plurality of decoders based on a portion model associated with each identified portion. The Examiner asserts that Lennon et al. disclose a video interpretation method using the same decoding method of video content. Applicant respectfully submits that Lennon et al. is almost exclusively discussing an encoding process and that the portions of the reference cited by the Examiner do not teach a decoding process. Each of FIGs. 1 - 11 cited by the Examiner relate to an encoding process or a process that precedes encoding. For example, the last step in FIG. 1 is a sequence of labeled RAGs (Region Adjacency Graphs); the result of the end of

the segment in step 206 in FIG. 2 is the generated labeled RAGs; the result of the flowchart of FIGs. 4 and 5 is a labeled RAG; finally, the result of the process of FIG. 11 when the end of the segment is reached is a RAG (see steps 252, 254).

A RAG is a region and their spatial adjacency properties. The regions within an image are analyzed with a high level description and based on semantic labels. FIGs. 3A and 3B illustrate an image and its various regions and the graphical representation of a RAG 310. See. Col. 7, line 62 - col. 8, line 16. This information enables the system that performs the video interpretation to have a file that describes each image and its various regions, their characteristics and relationships. From FIGs. 3A and 3B, we see how the house R4 and sky R1 and other regions can be inter-related in the RAG representation. All of this process of analyzing a video signal is before the signal is encoded according to Lennon et al.

One alternate embodiment of Lennon et al.'s invention is described in column 13, wherein the video segment analyzer 140 is integrated with an object-based video coding system. What we shall see is that this embodiment of Lennon et al. does not anticipate the present invention in either the encoding context or in the decoding context. Lennon et al. teach taking the basic video interpretation and RAG generation concepts and integrating that into an object-based video coder. Col. 13, line 28-30. They teach that after creating the labeled RAG, the "labeled RAG is then output by the frame event analyzer 252 to a region encoder 254 which encodes the RAG. The region encoder 254 encodes the regions of the RAG, including their adjacency and depth information and semantic labels into a bitstream." Col. 13, lines 36 - 41.

There are several differences between the invention of claim 1 and this disclosure by Lennon et al. First, Lennon et al. do not teach a plurality of encoders. They only teach that the labeled RAG is encoded according a standard object-based digital coding system. There is no suggestion or reference to more than one encoder. They state that the region encoder encodes the regions, their adjacency, their depth information and semantic labels. FIG. 11

shows element 254 which is the region encoder that encodes the regions in the RAG. There is simply no mention of a plurality of encoders.

Next, Lennon et al. fail to discuss any decoding process. Claim 1 is a method of decoding a bitstream. The bitstream that is decoded according to claim 1 must have been encoded by a plurality of encoders. The bitstream created by the region encoder 254 as taught in Lennon et al. does not qualify as a bitstream to be decoded by the method of claim 1 since it was encoded using the single region encoder. Since Lennon et al. are only concerned with the creation of the labeled RAG and then encoding the regions of the RAG using the single encoder, they do not address any decoding process which requires identifying portions of the bitstream, and routing each identified portion to one of a plurality of decoders based on a portion model associated with each identified portion. In this regard, Lennon et al. is simply silent.

For these reasons, Applicant respectfully submits that Lennon et al. do not anticipate the invention of claim 1 and that this claim is in condition for allowance.

Claims 2 - 6 each depend from claim 1 and recite further limitation therefrom. Therefore, Applicant submits that these claims are patentable as well.

Claim 7 recites a method of decoding a bitstream divided into portions, each portion being encoded by an encoder of a plurality of encoders. There are a number of limitations set forth in this claim. Given the analysis above regarding the teachings of Lennon et al., Applicant submits that Lennon et al. fail to teach the decoding method of claim 7. Most notably, Lennon et al. only teaches using a single encoder to encode the labeled RAG. Claim 7 requires a bitstream encoded by one of a plurality of encoders. Therefore, Applicant submits that claim 7 is patentable and in condition for allowance.

Claim 8 depends from claim 7 and recites further limitations therefrom. Applicant submits that this claim is patentable as well.

Claim 11 recites a method of decoding a bitstream divided into segments, each segment being encoded by an encoder of a plurality of encoders. Claim 12 requires the use of a plurality of encoders to encode the bitstream and a plurality of decoders. Claim 14 recites a bitstream divided into a plurality of portions. Claim 14 includes using a first decoder and a generic decoder. Claim 19 recites a method of decoding a bitstream that requires a generic decoder or one of a plurality of decoders. Each of these independent claims recites a plurality of encoders and/or a plurality of decoders. Inasmuch as Lennon et al. simply only teach a single object-based encoder, Applicant respectfully submits that Lennon et al. do not anticipate the limitations of each of these independent claims. Therefore, these claims are patentable and in condition for allowance.

Furthermore, dependent claims 13, 15 - 18 and 20 - 26 each recite further limitations from their respective parent claims. These claims are therefore patentable as well.

In sum, Lennon et al. disclose a process for interpreting a video scene and creating a labeled RAG document that describes regions within the scene and their relationships. Their focus was on the regional analysis of the video image and not on the encoding process. After the video interpretation process, they simply disclosed encoding the RAGs to create a bitstream. There is no suggestion of using more than one encoder or more than one decoder. They are silent with regards to any type of decoding process or architecture. Therefore, Applicant respectfully submits that this patent application is now in condition for allowance.

Rejection of Claims 9 and 10 Under Section 103

The Examiner rejects claims 9 and 10 under Section 103 as being unpatentable over Lennon et al. Applicant traverses this rejection and notes that these claims depend from claim 7. Claim 7 recites a method of decoding a bitstream in which each divided portion of the bitstream is encoded by one of a plurality of encoders, and the encoder being chosen based on a profile of each segment. As discussed above, Applicant has explained that Lennon et al. only teach a single object-based encoder for encoding the labeled RAG files.

There is simply no suggestion of a plurality of encoders and furthermore, there is no suggestion of selecting one of a plurality of encoders based on a profile of each portion. Therefore, Applicant submits that claims 9 and 10 are not obvious in view of Lennon et al. in that they fail to teach several of the basic limitations of the parent claim.

Furthermore, Applicant traverses the conclusion that the limitations recited in these claims is well known in the art. If the Examiner maintains the section 103 rejection, Applicant respectfully challenges this conclusion and requests evidence that the list of models would be notoriously known in the art. See MPEP 2144.03.

CONCLUSION

Having addressed the rejection of claims 1 - 25, Applicant respectfully submits that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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Date: August 23, 2004
(Due Date: Saturday, August 21, 2004)
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